

# ANNALS *of* PHYSICS

## *Editor*

Philip M. Morse

## *Assistant Editors*

Bernard T. Feld

Herman Feshbach

Richard Wilson

## *Editorial Council*

A. Abragam

W. M. Fairbank

I. Talmi

J. Bardeen

V. L. Fitch

V. L. Telegdi

H. A. Bethe

W. A. Fowler

V. F. Weisskopf

D. A. Bromley

P. C. Martin

E. P. Wigner

S. D. Drell

J. Schwinger

A. Zichichi

VOLUME 89

1975

ACADEMIC PRESS

New York and London

A Subsidiary of Harcourt Brace Jovanovich, Publishers

Copyright © 1975 BY ACADEMIC PRESS, INC.

ALL RIGHTS RESERVED

No part of this publication may be reproduced or transmitted in any form, or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the copyright owner.

*Printed by the St. Catherine Press, Ltd. Bruges, Belgium*

## CONTENTS OF VOLUME 89

### NUMBER 1, JANUARY 1975

T. GARAVAGLIA AND JAGANNATHAN GOMATAM. The Schrödinger Equation in Helical Coordinates . . . . .	1
JAMES L. SIGEL. Electronic Motion in a Model Solid of Short Range Potentials . . . . .	11
DANIEL C. MATTIS. Theory of Quasimagnetic Impurity in a Metal: An Exactly Soluble Model of Interacting Electrons . . . . .	45
F. J. W. HAHNE AND W. D. HEISS. The Effect of Compound States on Collective-State Singularities in the Optical Potential . . . . .	68
I. LOVAS. Nuclear Reactions with Core Excitation . . . . .	96
J. KUPSCH, W. RÜHL, AND B. C. YUNN. Conformal Invariance of Quantum Fields in Two-Dimensional Space-Time . . . . .	115
SHIRLEY A. JACKSON. A Multiperipheral Model with Continued Cross Channel Unitarity . . . . .	149
SHIRLEY A. JACKSON. Angular Momentum Analysis of a Composite Particle Scattering Problem and Its Cross Channel Analog . . . . .	168
A. NIKOLOV. The Physical Ladders and Relativistic Generalizations . . .	181
DAVID G. BOULWARE AND S. DESER. Classical General Relativity Derived from Quantum Gravity . . . . .	193
DANILO VILLARROEL. On Redefinitions of the Energy Momentum Tensor	241
BAHRAM MASHHOON. Massless Spinning Test Particles in a Gravitational Field . . . . .	254
ABSTRACTS OF PAPERS TO APPEAR IN FUTURE ISSUES . . . . .	258

### NUMBER 2, FEBRUARY 1975

R. W. DAVIES AND K. T. R. DAVIES. On the Wigner Distribution Function for an Oscillator . . . . .	261
M. SASSI, C. DEUTSCH, AND G. COULAUD. Stark Broadening of the Overlapping 4471.48 Å HeI Line in a Plasma. II. Nonmarkovian and Ion Dynamic Effects . . . . .	274
J. G. MALAN, W. F. E. PINEO, M. DIVADEENAM, B. H. CHOI, E. G. BILPUCH, and H. W. Newson. <i>s</i> - and <i>p</i> -Wave Neutron Spectroscopy. Xc. Intermediate Structure: <sup>88</sup> Sr . . . . .	284

ROBERT R. SCHEERBAUM AND C. M. SHAKIN. Nuclear Rearrangement Scattering. II. Scattering of Composite Projectiles with Application to Deuteron Elastic Scattering, the Deuteron Optical Model, and Deuteron Stripping . . . . .	299
B. GIRAUD, J. LETOURNEUX, AND E. OSNES. A Generator Coordinate Theory of Nuclear Reactions . . . . .	359
O. BOHIGAS AND M. J. GIANNONI. Level Density Fluctuations and Random Matrix Theory . . . . .	393
NICOLAS PAPANICOLAOU. On the Infrared Singularities of Green's Functions in Quantum Electrodynamics . . . . .	423
AHMED ALI AND M. S. K. RAZMI. $K_{l3}$ Form Factors and (8, 8) Model of Chiral Symmetry Breaking . . . . .	441
R. S. INGARDEN AND A. KOSSAKOWSKI. On the Connection of Non-equilibrium Information Thermodynamics with Non-Hamiltonian Quantum Mechanics of Open Systems . . . . .	451
ABSTRACTS OF PAPERS TO APPEAR IN FUTURE ISSUES . . . . .	486
AUTHOR INDEX . . . . .	489

Subject Index for Volume 89 will appear in the December 1975 issue as part of a cumulative index for the year 1975.